

<b>Notice of Allowability</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/810,142	GUTMARK ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Ted Kim	3746	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 11/06/2006.
2. ☒ The allowed claim(s) is/are 1-20.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☐ All   b) ☐ Some\*   c) ☐ None   of the:
    1. ☐ Certified copies of the priority documents have been received.
    2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.  
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.
  - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948) attached
    - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
  - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

- |  |  |
|--|--|
| 1. <input type="checkbox"/> Notice of References Cited (PTO-892)   | 5. <input type="checkbox"/> Notice of Informal Patent Application                      |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 6. <input type="checkbox"/> Interview Summary (PTO-413),<br>Paper No./Mail Date _____. |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO/SB/08),<br>Paper No./Mail Date _____    | 7. <input checked="" type="checkbox"/> Examiner's Amendment/Comment                    |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit<br>of Biological Material | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance   |
|  | 9. <input type="checkbox"/> Other _____.   |

### EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Robert Reeser III on 12/19/06.

The application has been amended as follows:

### CLAIMS

The claims have been amended as follows:

1. (currently amended) A method for operating a gas turbine engine, said gas turbine engine comprising a nozzle including a plurality of chevrons coupled to the nozzle, said method comprising:

positioning a plurality of tubes azimuthally around an outer periphery of the nozzle;

coupling an upstream end of each of the plurality of tubes to a manifold;

coupling a downstream end of each of the plurality of tubes to the nozzle such that the plurality of tubes each externally extend away from the manifold,

channeling compressed air from the gas turbine engine to a noise suppression system that includes the manifold and the plurality of tubes; and

selectively operating the noise suppression system such that air discharged from the plurality of tubes of the noise suppression system enhances a streamwise vortex generated downstream from each respective chevron.

8. (currently amended) An assembly for a gas turbine engine, said assembly comprising:

a gas turbine nozzle;

a plurality of chevrons coupled to said gas turbine nozzle; and

a noise suppression system coupled to said gas turbine nozzle, said noise suppression system comprising a manifold coupled to said gas turbine nozzle and a plurality of azimuthally arranged tubes each comprising an upstream end coupled to said manifold and a downstream end coupled to said gas turbine nozzle such that said plurality of tubes each extend away from said manifold, said noise suppression system is selectively operable to discharge flow from said plurality of tubes to enhance ~~facilitate enhancing~~ a streamwise vortex generated downstream from each respective chevron.

11. (currently amended) An assembly in accordance with ~~Claim 9~~ Claim 10 wherein each of said plurality of tube pairs is selectively oriented to facilitate generating a streamwise vortex downstream from each respective chevron in a core gas turbine engine nozzle flowpath.

12. (currently amended) An assembly in accordance with ~~Claim 9~~ Claim 10 wherein each of said plurality of tube pairs is selectively oriented to facilitate generating a streamwise vortex downstream from each respective chevron in a fan nozzle flowpath.

15. (currently amended) A gas turbine engine comprising:

a core engine nozzle;

a fan nozzle;

a plurality of chevrons coupled to at least one of said core engine nozzle and said fan nozzle; and

a noise suppression system coupled to at least one of said core engine nozzle and said fan nozzle, said noise suppression system comprising a manifold coupled to at least one of said core engine nozzle and said fan nozzle and a plurality of tubes each comprising an upstream end coupled to said manifold and a downstream end coupled to said at least one of said core engine nozzle and said fan nozzle so that said plurality of tubes externally extend away from said manifold, said noise suppression system is selectively operable to discharge flow from said plurality of tubes to enhance ~~facilitate~~ ~~enhancing~~ a streamwise vortex generated downstream from each respective chevron.

16. (currently amended) A gas turbine in accordance with claim 15 wherein a plurality of tube pairs are coupled to said manifold, each said tube pair is selectively oriented to facilitate enhancing a vortex generated downstream from each respective chevron.

### REASONS FOR ALLOWANCE

2. The following is an examiner's statement of reasons for allowance: the prior art of record do not fairly teach in permissible combination the claimed invention. Applicant's arguments of 11/06/2006, in combination with the amendments above distinguish the claims from the art of record. It is noted that the above amendments provide that the flow being discharged from the tubes enhance the streamwise vortex from each respective chevron. Upon combination with the base references, there is no teaching that the flow

from the tubes of Lilley would enhance a streamwise vortex generated from *each* respective chevron.

3. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

#### ***Contact Information***

Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Ted Kim whose telephone number is 571-272-4829. The Examiner can be reached on regular business hours before 5:00 pm, Monday to Thursday and every other Friday.

The fax number for the organization where this application is assigned is 571-273-8300.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ehud Gartenberg, can be reached at 571-272-4828. Alternate inquiries to Technology Center 3700 can be made via 571-272-3700.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). General inquiries can also be directed to the Patents Assistance Center whose telephone number is 800-786-9199. Furthermore, a variety of online resources are available at <http://www.uspto.gov/main/patents.htm>

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Art Unit: 3746

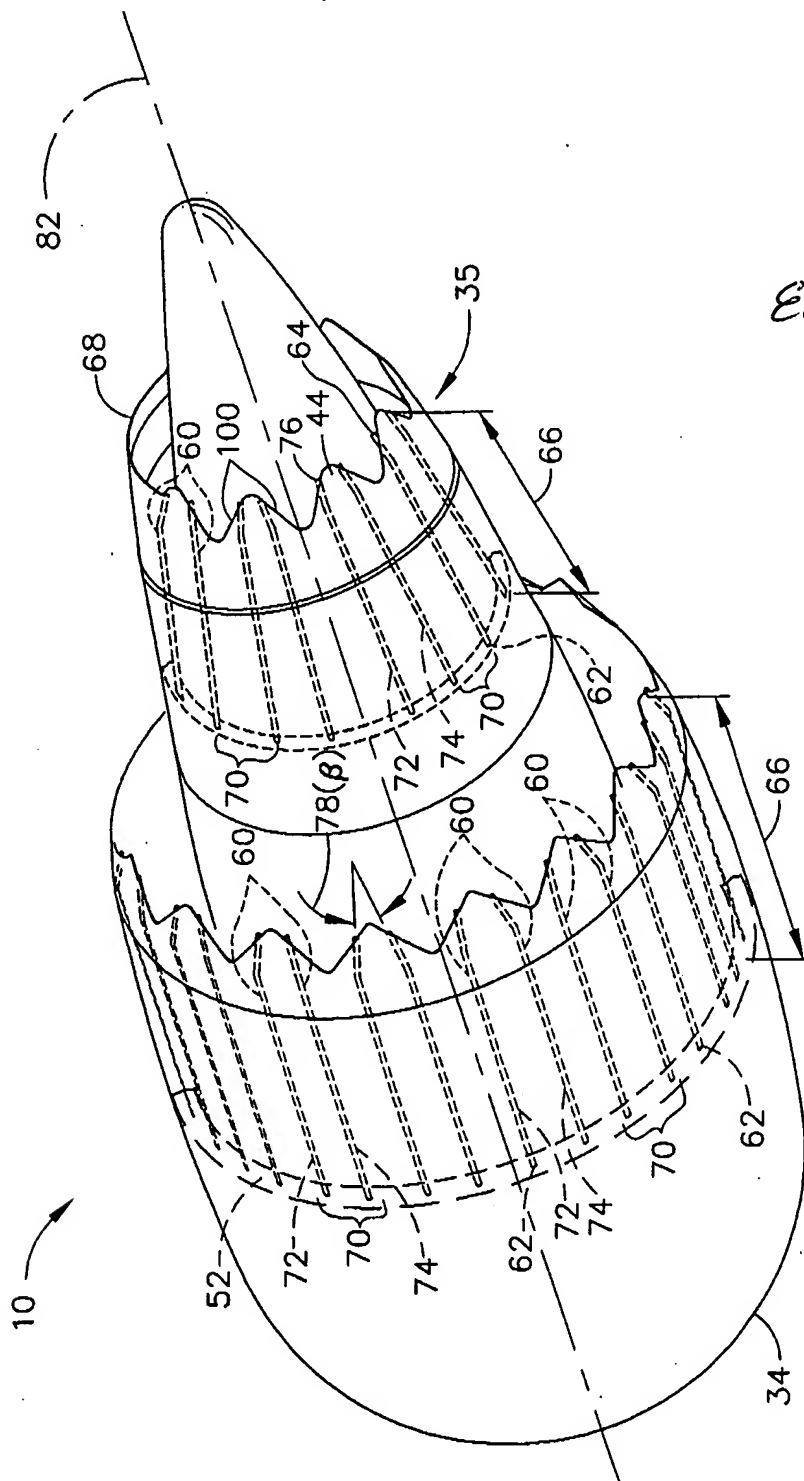


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Ted Kim	Telephone	571-272-4829
Primary Examiner	Fax (Regular)	571-273-8300
December 19, 2006	Fax (After Final)	571-273-8300
Technology Center 3700	Telephone	571-272-3700

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4/6



*Entry Approved*

*Figs 4.6*

*T22*

*12/19/06*

FIG. 4



METHODS AND APPARATUS FOR OPERATING GAS TURBINE ENGINES  
INVENTOR: EPHRAIM J. GUTMARK, et al.  
DOCKET: 139141  
ATTY: ROBERT B. REESER, III; PHONE: (314) 621-5070  
REPLACEMENT SHEET

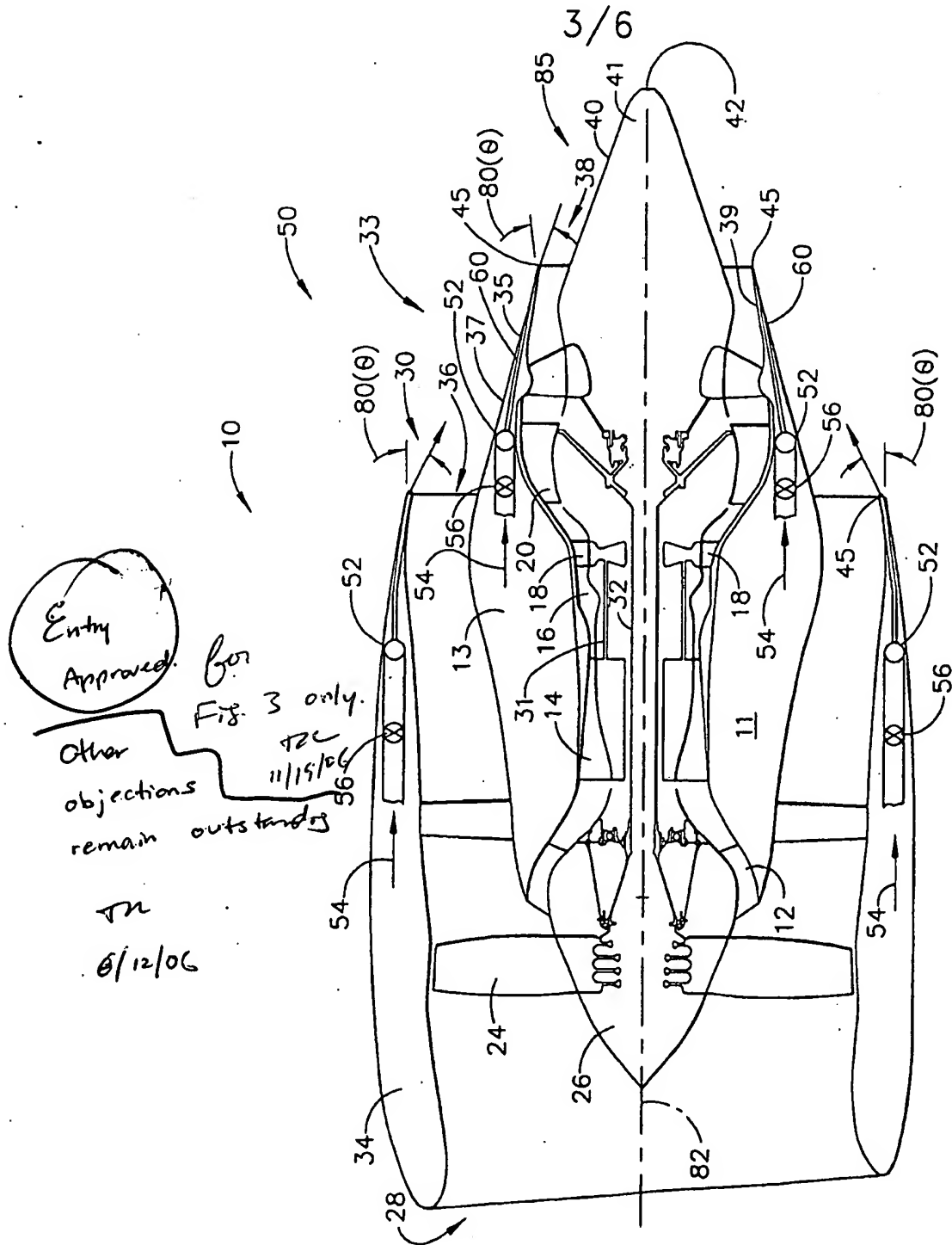


FIG. 3